

AMENDMENTS TO THE CLAIMS:

Kindly cancel claims 22 and 23, without prejudice, and amend claims 1, 6, 24 and 25 as shown below.

This listing of claims will replace all prior versions and listings of claims in the Application:

Claim 1 (currently amended): A pump for moving a fluid comprising:

- a. an actuator housing having a chamber for housing the fluid, the chamber having ports for accommodating fluid flow through the chamber;
- b. a plurality of individual actuators arranged in a series and located in the chamber and in contact with the fluid, wherein successive actuators in the series are sequentially operated to advance the flow of fluid;
- c. an activator for sequentially activating individual actuators, wherein each actuator comprises a reversibly responsive elastomeric material selected from the group consisting of electroactive polymers, electrolytically activated polymer gels, optically activated polymers, chemically activated polymers, magnetically activated polymers, thermally activated polymers and shape memory polymers wherein the elastomeric material ~~that expands in at least one direction and~~, when activated, changes dimensions and exerts a displacing force on the housed fluid.

Claim 2 (original): The pump of Claim 1 wherein the actuator housing comprises two or more chambers for housing the fluid in flow connection.

Claim 3 (previously presented): A pump for causing a fluid to flow at a determined rate comprising the pump of Claim 1 wherein the activator is designed to activate individual actuators at a time and sequence selected to displace the fluid at the chosen rate.

Claim 4 (previously presented): A pump of Claim 1 comprising in addition a controller for the actuator whereby individual actuators are activated at a determined time.

Claim 5 (previously presented): The pump of Claim 4 wherein the controller is a programmable microprocessor in electrical connection with the activator.

Claim 6 (currently amended): The pump of Claim 4 comprising in addition a sensor [[means]] for determining physical properties of the fluid wherein the sensor is in electrical connection with the controller and is capable of delivering signals received from the fluid to the controller.

Claim 7 (previously presented): The pump of Claim 6 wherein the physical properties to be sensed are selected from the group consisting of chemical composition, pH, pressure, temperature and flow rate.

Claim 8-14 (withdrawn):

Claim 15 (original): The pump of Claim 1 wherein at least one of said actuators is positioned near the inlet port of the actuator housing and, when activated, forms a barrier preventing backflow of fluid from the actuator housing.

Claim 16 (withdrawn):

Claim 17 (original): The pump of Claim 1 wherein the actuators are essentially inert and non-reactive with the fluid.

Claim 18 (withdrawn):

Claim 19 (original): The pump of Claim 1 wherein individual actuators are each encased in an essentially inert material.

Claim 20 (previously presented): The pump of Claim 19 wherein the material is semi-permeable to electrolytes.

Claim 21 (original): The pump of Claim 17 wherein the material is non-permeable.

Claim 22 (canceled).

Claim 23 (canceled).

Claim 24 (currently amended): The pump of Claim ~~[[23]]~~1, wherein each actuator is electrically shielded from contiguous actuators.

Claim 25 (currently amended): The pump of Claim ~~[[23]]~~24, comprising an electrical circuit for activating individual actuators at a determined time.

Claim 26 (previously presented): The pump of Claim 25 comprising in addition a microprocessor in electrical contact with the electrical circuit, the microprocessor being programmed to drive the electrical circuit at a determined time whereby individual actuators are activated at a determined time and sequence.

Claim 27-57 (withdrawn):

HAYES SOLOWAY P.C.
3450 E. SUNRISE DRIVE,
SUITE 140
TUCSON, AZ 85718
TEL. 520.882.7623
FAX. 520.882.7643

175 CANAL STREET
MANCHESTER, NH 03101
TEL. 603.668.1400
FAX. 603.668.8567